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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/424,685	TAMORI, TERUHIKO	
	Examiner	Art Unit	
	Clara Yang	2635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,6,7,9,13,19,20,22-25 and 27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *6 and 7* is/are allowed.

6)☒ Claim(s) *1-3,9,13,18,19,25 and 27* is/are rejected.

7)☒ Claim(s) *20 and 22-24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 January 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 3 August 2004 have been fully considered but they are not persuasive.

Objection of Claim 20

The typographical error "read/write/device" is still present in the other limitations of the claim. Consequently the objection is maintained.

Rejection of Claim 18 under 35 U.S.C. 112, Second Paragraph

In response to the amendment of claim 18, the claim is still rejected under 35 U.S.C. 112, second paragraph as being indefinite. Claim 18, which is now dependent on claim 6, calls for a "machine/system control device". Claim 6, however, does not recite a machine/system control device.

35 U.S.C. 103(a) rejection of Claims 1 - 3, 13, and 27

The applicant argues on pages 12 - 14 that the fingerprint sensor described in U.S. Patent No. 6,628,810 (Harkin) "is quite different from the pressure-based fingerprint sensor of [Itsumi's] claimed invention" and that "it would not be obvious to modify Itsumi's electrodes 61 as taught by Harkin", the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In this case, Itsumi teaches an integrate circuit (IC) card 63 having a fingerprint sensor 61 for verifying the identity of a user. As indicated by Figs. 4 and 12B, Itsumi's fingerprint sensor

61 is only able to output a one-dimensional representation of a sensed fingerprint. Harkin, on the other hand, teaches a fingerprint sensor that is configured to sense a pattern of ridges and valleys of a fingerprint by scanning an array of row conductors 18 and column conductors 20 (i.e., electrode lines arranged in an x-direction and y-direction), wherein a sensing element 12, which comprises a switch 16 (i.e., an active element), is connected at each intersection of the row and column conductors (see Figs. 2 and 3 and Col. 5, lines 4 - 59). Harkin further teaches that other forms of sensing elements 12 are possible. For example, in a touch-sensing array, each sensing element 12 comprises as a TFT (or thin film diode) and a capacitor that is periodically charged through the TFT, wherein one of the capacitor's plate is grounded by touching through a deformable, pressure responsive membrane (see Col. 5, lines 60 - 67 and Col. 6, lines 1 - 6). Upon addressing all rows and columns, Harkin teaches that sense circuit 24 outputs the responses of sensing elements 12 in the form of a serial data pulse train (i.e., a digital electrical signal), which provides fingerprint characteristics such as orientation of ridgelines and relative positions of minutiae (see Col. 7, lines 11 - 19, 31 - 36, and 45 - 49). Harkin's fingerprint sensing element array, which can be adapted to sense only finger characteristics and incorporated in a smart card, outputs three-dimensional fingerprint information (see Col. 3, lines 1 - 6; Col. 5, lines 54 - 59; and Col. 8, lines 33 - 36). One of ordinary skill in the art of biometrics recognizes that three-dimensional fingerprint information provides higher accuracy of recognition than a one-dimensional representation. In addition to providing three-dimensional fingerprint information, Harkin's fingerprint sensor device is able to sense different hand biometric characteristics while using only a single sensing element array, thus simplifying manufacture while reducing the overall effective error rate and improving security (see Harkin, Col. 2, lines 9 - 30). Consequently, it would have been obvious to one having

ordinary skill in the art at the time the invention was made to modify Itsumi's fingerprint sensor/electrodes 61 as taught by Harkin, and the combination of Itsumi and Harkin teaches the limitations of the applicant's claims 1 – 3, 13, and 27.

35 U.S.C. 103(a) rejection of claims 9, 19, and 25

In response to applicant's argument on page 15 ("it would not be obvious to modify the system taught by Murphy with the teachings of Takahashi (U.S. Patent No. 5,172,785) because it is not clear how the controlling mechanism shown in Fig. 14 of Takahashi would be applied to the vehicle control system shown in Figure 7 of Murphy"), the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Murphy teaches a vehicle control system that controls a vehicle based on a personal characteristic (such as a fingerprint) of a user. Per Murphy, for each authorized driver whose name and fingerprints are contained in controller module 209's database, additional information, such as the driver's schedule or the actual range of allowable vehicle speed (see Col. 16, lines 1 – 11), are also stored in the database. Murphy's system, however, requires individually setting the allowable speed limit for each restricted driver.

Takahashi also teaches a vehicle control system. Takahashi's system, however, is able to limit the vehicle's speed based on the age of a driver. Per Takahashi, the controlling mechanism produces a vehicle control signal according to a predetermined control characteristic, estimates a driver's characteristic from a signal supplied from the sensing means (i.e., components 8 – 11

and 26), and adjusts the control characteristic in accordance with the driver's age (see Col. 2, lines 6 - 25). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Murphy's system as taught by Takahashi because a vehicle controller that is able to automatically control operation of the vehicle based on personal characteristics enhances safety and ensures proper vehicle control performance particularly for the aged (see Takahashi, Col. 1, lines 33 - 49).

In response to applicant's argument on page 16 that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., user-specific information being name, sex, age, license number, etc.) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

2. Applicant's arguments filed on 3 August 2004 with respect to claims 9, 19, and 25 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

3. Claims 6 and 7 are allowed.

4. Claim 18 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

5. Claims 20 and 22 - 24 would be allowable if rewritten or amended to correct the informalities cited in the objections.

Claim Objections

6. Claims 19 and 20 are objected to because of the following informalities:

- Claim 19: The claim lacks a period.

- Claim 20: Change "read/write/device" to "read/write device" in the second limitation (which begins with "pressing a finger of the first person..."), fourth limitation (which begins with "connecting the information recording/processing device..."), and the fifth limitation (which begins with "reading identification data...". Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 18 recites the limitation "machine/system control device" in the first line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claim 9 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,100,811 (Hsu et al.).

Hsu's fingerprint matching device 30 (i.e., a machine/system control device), as shown in Figs. 5 and 6, comprises: (a) door-mounted fingerprint sensor 14 and interior fingerprint sensor 16; (b) fingerprint correlator 84 for comparing a sensed/live fingerprint image with pre-

registered fingerprint features stored in memory 90 (see Col. 6, lines 5 - 16); and (c) fingerprint match controller 70 for controlling the operation of the vehicle utilizing user-specific information stored in memory 98 when the sensed fingerprint matches one stored in memory 90 (see Col. 5, lines 8 - 20 and Col. 6, lines 37 - 42). Because certain user settings (i.e., user-specific information), such as airbag control, suspension, and transmission settings, are adjusted based on a user's previously sensed weight, height, and/or other characteristics, these settings comprise personal characteristics of each user. Hsu also discloses that each user's speech profile (i.e., a personal characteristic) is stored in a memory unit of in-car computer 54 and is retrieved upon verification of a user's identity (see Col. 5, lines 46 - 51).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 1 - 3, 13, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,559,504 (Itsumi et al.) in view of U.S. Patent No. 6,628,810 (Harkin).

Referring to Claims 1 - 3, and 27, Itsumi teaches an integrated circuit (IC) card 63 (see Figs. 24 - 26) having: (a) a fingerprint sensor 61 (see Col. 14, lines 62 - 64 and Col. 15, lines 2 - 13); (b) calculation unit 71 and signal processing unit 72 for converting fingerprint data detected by fingerprint input unit 70 into digital signals (see Col. 15, lines 24 - 27); (c) external terminal 76 for electrically connected IC card 63 with an external terminal (see Col. 15, lines 16 - 20 and 32 - 36); (d) fingerprint data registration memory 74; and (e) central processing unit (CPU) 77 or

fingerprint matching unit for comparing input fingerprint data with the registered fingerprint data and generating a signal to set external terminal 76 in an operable state when the input fingerprint data matches the registered fingerprint data (see Col. 15, lines 28 - 36). Itsumi's method for verifying an individual comprises the steps of: (a) registering fingerprint data in IC card 63's fingerprint data registration memory 74 in advance (see Col. 15, lines 28 - 30); (b) electrodes 61 and fingerprint input unit 70 sensing a fingerprint of an individual (see Col. 15, lines 9 - 13 and 24 - 26); (c) CPU 77 comparing the sensed fingerprint to the registered fingerprint (see Col. 15, lines 28 - 32); and (d) CPU 77 setting external terminal 76 in the operable state via a signal when the input fingerprint data matches the registered fingerprint data (see Col. 15, lines 32 - 36). Itsumi, however, omits teaching that electrodes 61 has a plurality of scanning electrode lines arranged in an X-direction and a plurality of scanning electrode lines arranged in a Y-direction with an active element connected to the X and Y scanning electrode lines at each intersection.

In an analogous art, Harkin teaches a biometric characteristics sensing device that can be incorporated in a smart card (see Col. 3, lines 1 - 6 and Col. 8, lines 33 - 36). Referring to Figs. 2 and 4, Harkin's sensing device comprises a sensing element array having row address conductors 18 (i.e., "X scanning electrode lines") and column address conductors 20 (i.e., "Y scanning electrode lines"). Row address conductors 18 and column address conductors 20 are each connected at an intersection by a sensing element 12, which includes a switching device 16 and a sense electrode 17 (see Col. 5, lines 13 - 19 and 24 - 42). Per Harkin, the sensing element array has a high-resolution region 14 for sensing fingerprint patterns and a low-resolution region 15 for sensing other, generally large, hand biometric characteristics such as finger length and/or width (see Col. 4, lines 55 - 67 and Col. 5, lines 1 - 3). Harkin discloses that the

capacitances of electrodes 17 in region 14 depend on the spacing of the immediately overlying finger's ridges and troughs (see Col. 5, lines 36 - 42). Harkin further teaches that other forms of sensing elements 12 are possible. For example, in a touch-sensing array, each sensing element 12 comprises as a TFT (or thin film diode) and a capacitor that is periodically charged through the TFT, wherein one of the capacitor's plate is grounded by touching through a deformable, pressure responsive membrane (see Col. 5, lines 60 - 67 and Col. 6, lines 1 - 6). Upon addressing all rows and columns, Harkin teaches that sense circuit 24 outputs the responses of sensing elements 12 in the form of a serial data pulse train (i.e., a digital electrical signal), which provides fingerprint characteristics such as orientation of ridgelines and relative positions of minutiae (see Col. 7, lines 11 - 19, 31 - 36, and 45 - 49).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Itsumi's electrodes 61 as taught by Harkin because Harkin's fingerprint sensor device is able to (1) output three-dimensional fingerprint information, which is provides high accuracy recognition, and (2) sense different hand biometric characteristics while using only a single sensing element array, thus simplifying manufacture while reducing the overall effective error rate and improving security (see Harkin, Col. 2, lines 9 - 30 and Col. 8, lines 8 - 15).

Regarding Claim 13, Itsumi's IC card 63 has information recording memory 75for storing information specific to the user, such as his/her banking information (see Col. 15, lines 32 - 36).

13. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,100,811 (Hsu et al.) as applied to claim 9 above, and further in view of U.S. Patent No. 6,628,810 (Harkin).

Though Hsu teaches using fingerprint sensors, Hsu is silent using a fingerprint sensor as called for in the claim.

As previously explained in claims 1 - 3 and 27, Harkin teaches the fingerprint recited in claim 19.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hsu's fingerprint sensors 14 and 16 as taught by Harkin because Harkin's fingerprint sensor device is able to (1) output three-dimensional fingerprint information, which is provides high accuracy recognition, and (2) sense different hand biometric characteristics while using only a single sensing element array, thus simplifying manufacture while reducing the overall effective error rate and improving security (see Harkin, Col. 2, lines 9 - 30 and Col. 8, lines 8 - 15).

14. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,219,793 (Li et al.) in view of U.S. Patent No. 6,225,890 (Murphy) and U.S. Patent No. 5,172,785 (Takahashi).

Li's method for controlling access to a vehicle comprises: (a) a wireless control module (hereinafter referred to as "wireless source") prompting its user for a fingerprint, thereby causing the user to place a finger on the wireless source's fingerprint capturing device 101 (i.e., a fingerprint sensor module) (see Col. 6, lines 54 - 59; Col. 16, lines 51 - 55; and Col. 17, lines 4 - 6); (b) the wireless source transmitting a fingerprint token, which contains data of the user's captured fingerprint minutiae, to the vehicle's receiver (see Col. 7, lines 40 - 47 and Col. 16, lines 51 - 54); (c) the vehicle comparing the received fingerprint token with stored fingerprint data of a registered user (see Col. 16, lines 59 - 62 and 66 - 67; and Col. 17, lines 1 - 2); and (d) the vehicle unlocking the car doors when the received fingerprint token matches the stored

fingerprint data (see Col. 17, lines 2 - 6). Per Li, the vehicle provide most of the functionality of central authorization system (CAS) 106, which stores fingerprint tokens of a plurality of users (see Col. 7, lines 17 - 22 and 28 - 33); hence, Li's vehicle also stores fingerprint tokens of a plurality of registered users. Li's method, however, lacks the vehicle limiting its speed based on verified user's driver-specific information, which is stored in the registered fingerprint tokens database.

In an analogous art, Murphy's vehicle control system is able to restricting use of a vehicle based on a driver's personal characteristics in addition to identification data (see Col. 3, lines 21 - 47 and Col. 8, lines 54 - 61). As shown in Fig. 7, Murphy's system comprises: (a) biometric indicium receiving and analysis mechanism (BIRAM) 203, which receives a fingerprint from a vehicle operator (see Col. 4, lines 39 - 52; Col. 13, lines 33 - 41; and Col. 15, lines 11 - 15); (b) controller 209 or fingerprint matching unit for matching the presented fingerprint with the identities and registered fingerprint data of one or more authorized drivers (see Col. 13, lines 36 - 41 and Col. 15, lines 15 - 21); (c) a memory unit within controller 209 for containing a database of the identities and registered fingerprint data (see Col. 15, lines 15 - 21 and 66 - 67; and Col. 16, lines 1 - 11); and (d) token receiving and analysis mechanism (TRAM) 205 for receiving a token or smart card presented by a would-be driver (see Col.6, lines 55 - 62; Col. 7, lines 1 - 14; Col. 14, lines 46 - 54; and Col. 15, lines 11 - 15 and 60 - 65). Murphy discloses that a data transfer module 221 is used to add additional people to the database of authorized drivers and that each authorized driver periodically re-enters a fingerprint sample into the system in order to compensate for the tendency of biometric indicium to change with the passage of time (see Col. 6, lines 49 - 54 and Col. 15, lines 55 - 65), thus implying that fingerprint data stored in controller 209's memory unit is associated with updateable user-

specific information. Murphy also teaches that controller 209 determines if any control action(s), such as reducing vehicle speed to a selected speed range, are to be imposed on vehicle based on user-specific information corresponding to the presented fingerprint (see Col. 5, lines 29 - 54; Col. 15, lines 21 - 31 and 37 - 42; and Col. 17, lines 3 - 13). Murphy's controller 209, however, is unable to automatically control operation of the vehicle based simply on personal characteristics, such as age.

In an analogous art, Takahashi teaches a vehicle control system that is adjustable based on a driver's age and driving characteristics (see Abstract). As shown in Fig. 14, which is a schematic view of Takahashi's accelerator control system, Takahashi's system comprises: (a) card reader 8 for receiving integrated circuit (IC) card 8a; and (b) driver's accelerating characteristic estimator 35 or control mechanism for controlling operation of a vehicle based on the driver's age read from IC card 8a and inputs from components 8 -11 and 26 (see Col. 10, lines 64 - 68 and Col. 11, lines 1 - 23). Per Takahashi, the controlling mechanism produces a vehicle control signal according to a predetermined control characteristic, estimates a driver's characteristic from a signal supplied from the sensing means (i.e., components 8 - 11 and 26), and adjusts the control characteristic in accordance with the driver's age (see Col. 2, lines 6 - 25).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Li's method as taught by Murphy and Takahashi because (1) a database containing updateable specific information, such as personal characteristics, for each authorized driver enhances safety and security by ensuring that limitations on speed, driving routes, times of operation, etc. are established for restricted drivers (see Murphy, Col. 1, lines 66 - 67 and Col. 2, lines 1 - 13) and (2) a control system that is able to automatically impose limitations on the vehicle based on a driver's personal characteristics enhances safety and

ensures proper vehicle control performance particularly for the aged (see Takahashi, Col. 1, lines 33 - 49).

⌘

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clara Yang whose telephone number is (571) 272-3062. The examiner can normally be reached on 8:30 AM - 7:00 PM, Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (571) 272-3068. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CY

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